

Appl. No. 10/688,242  
Reply to Office Action of January 10, 2006

**REMARKS:**

Applicant appreciates the thorough examination of the application that is reflected in the Office Action dated January 10, 2006. Applicant thanks the Examiner for withdrawing the rejection of claims 11-20 under 35 U.S.C. 102(b) as being anticipated by Marshall (USPN 3,643,178), the rejection of claims 11-13 and 16 under 35 U.S.C. 102(b) as being anticipated by Lundstrom (USPN 4,461,009), the rejection of claims 1-6, 8 and 10 under 35 U.S.C. 103(a) as being unpatentable over Marshall (USPN ) in view of Pang (US 20030227957), and the rejection of claims 7 and 9 under 35 U.S.C. 103(a) as being unpatentable over either Marshall or Lundstrom and Pang and further in view of admitted prior art (APA).

To expedite prosecution of this application, Applicant amends independent claims 1, 10 and 16 to clarify those claims such that claim 1 now recites that "the back mirror is disposed to directly receive the focused, polarized laser light output by the birefringent lens," claim 10 now recites that "the back mirror is disposed to directly receive the laser beam output by the birefringent lens," and claim 16 now recites that "the second mirror is disposed to directly receive the focused, polarized laser light output by the integrated birefringent lens." (Emphasis added.) Applicant also amends claims 12-15 such that their preambles match that of claim 10.

Applicant also adds new dependent claims 21-26 to further highlight other distinctions over the cited references. For example, claim 21 recites that "a portion of the optical propagation path between the birefringent lens and the back mirror is free of a polarization element," and claim 22 recites that "the birefringent lens is formed from of a single piece of birefringent lens material."

Claims 1-10 and 12-26 (3 independent claims; 25 total claims) are pending in the application. Reexamination and reconsideration of the application, as amended, are respectfully requested.

**Claim Objections**

The Office objects to the preambles of claims 12-15. To expedite prosecution, Applicant amends the preambles consistent with the Examiner's suggestion. Accordingly, this ground of objection is moot.

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### Art-based Rejections

The Official Action rejects claims 1-6, 8, 10, 12-15 and 17-20 under 35 U.S.C. 103(a) as being unpatentable over See (WO 81/02224) in view of Pang (US 20030227957), and rejects claims 7 and 9 under 35 U.S.C. 103(a) as being unpatentable over See (WO 81/02224) in view of Pang (US 20030227957) and further in view of admitted prior art (APA).

Applicant respectfully traverses these rejections for at least the following reasons.

#### Claim 1

Applicant submits that the cited references fail to teach or suggest, for example, that “the back mirror is disposed to directly receive the focused, polarized laser light output by the birefringent lens,” as recited in claim 1.

For example, as shown in FIG. 2 of the See reference light from the lens-like wave plate 6 passes through the polarizing prism 4 into the Q switch 3 before being received at the mirror 2. This is discussed at page 6, lines 15-29 of the See reference which discusses that:

“a laser rod 1 has a pair of total reflection mirrors 2-2 arranged one on either side of the laser rod to form a cavity therebetween in which the laser rod is axially aligned, but between the one mirror 2 and the rod 2 is interposed a Q switch 3 and a polarizing prism 4, the latter forming an angular output for the laser beam to a frequency doubler 5, but in place of the fixed quarter wave plate normally used in such an assembly a lens-like wave plate 6 is used. This is formed from a pair of spaced-apart lens elements 7 and 8, at least one element of which is ground from birefringent crystalline material (e.g. quartz) with the curvature of the surface (or surfaces) chosen to give rapid radial variation of the phase shift and is oriented at an azimuth angle of 45 degrees to the pass plane of the polarizer 4.” (Emphasis added.)

Therefore, Applicant submits that the cited references fail to teach, for example, that “the back mirror is disposed to directly receive the focused, polarized laser light output by the birefringent lens,” as recited claim 1.

Moreover, Applicant submits that the See reference fails to teach or suggest that the lens-like wave plate 6 is “configured to focus and to affect the polarity of the laser light produced by the optical gain medium and passing through the birefringent lens,” as recited in claim 1. For example, as discussed at page 6, lines 29-32 of the See reference:

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**“To compensate for the lensing action of the wave plate, the second lens element is of opposite sign, and may also be fabricated of birefringent crystalline material to further enhance the depolarizing action.”** (Emphasis added.)

Applicant submits that the lens-like wave plate 6 of the See reference does not function as a lens and does not focus the laser light produced by the laser rod 1. Rather, the second lens element 8 is of the opposite sign of the first lens element 7 and therefore compensates for the lensing action or focusing action of the “lens-like” wave plate 6. As such, Applicant submits that the See reference also fails to teach or suggest that “the birefringent lens is configured to focus and to affect the polarity of the laser light produced by the optical gain medium,” as recited in claim 1.

Applicant submits that the Pang reference, cited for its teaching of an enclosure for solid-state laser system, is similarly deficient.

Accordingly, Applicant submits that the cited references do teach or suggest all of the limitations of claim 1, and therefore the rejection of claim 1 is improper and should be withdrawn. Thus, Applicant submits that claim 1 and its dependent claims 2-9 and 21-22 are in condition for allowance.

#### Claim 10

Claim 10 recites that “the birefringent lens is formed of an optically active material and comprises a substantially curved exterior surface to focus the laser light while adjusting the polarity of the laser light produced by the optical gain medium and passing through the birefringent lens,” and that “the back mirror is disposed to directly receive the laser beam output by the birefringent lens.”

For at least the same reasons stated above with respect to claim 1, Applicant submits that the cited references fail to teach or suggest the above underlined recitations of claim 10, and that the rejection of claim 10 is also improper and should be withdrawn.

Thus, Applicant submits that claim 10 and its dependent claims 12-15 and 23-24 are also in condition for allowance.

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Claim 16

The Official Action rejects claim 16 under 35 U.S.C. 102(b) as being anticipated by See (WO 81/02224).

Claim 16 recites that “the integrated birefringent lens comprises an optically active material and a curved surface to thereby simultaneously affect both the polarization and focus of light produced by the gain medium and passing therethrough,” and that “the second mirror is disposed to directly receive the focused, polarized laser light output by the integrated birefringent lens.”

For at least the same reasons stated above with respect to claim 1, Applicant submits that the cited references fail to teach or suggest the above underlined recitations of claim 16, and therefore that the rejection of claim 16 is improper and should be withdrawn.

Thus, Applicant submits that claim 16 and its dependent claims 17-20 and 25-26 are in condition for allowance.

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In conclusion, for the reasons given above, all claims now presently in the application are believed allowable and such allowance is respectfully requested. Should the Examiner have any questions or wish to further discuss this application, Applicant requests that the Examiner contact the undersigned attorney at (480) 385-5060.

If for some reason Applicant has not requested a sufficient extension and/or have not paid a sufficient fee for this response and/or for the extension necessary to prevent abandonment on this application, please consider this as a request for an extension for the required time period and/or authorization to charge Deposit Account No. 50-2091 for any fee which may be due.

Respectfully submitted,

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Dated: March 7, 2006

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